

Re. Box No. V.

- 1 Reference is made to the following documents:
- D1: EP 0 850 494 B (SIEMENS AG) 1 July 1998 (1998-07-01) mentioned in the application
- D2: DE 102 18 673 A (DAIMLER CHRYSLER AG) 20 November 2003 (2003-11-20)
- D3: US 5 797 980 A (FILLET FREDÉRIC) 25 August 1998 (1998-08-25)

2 INDEPENDENT CLAIMS 1 AND 11

The present application does not meet the requirements of Article 33(1)PCT because the subject matter of claims 1 and 11 is not novel in the sense of Article 33(2)PCT.

2.1.1 Document D1 discloses (the references in brackets refer to this document):

a method of operating a fuel cell system (Figure 1, (4)), whereby a process gas (L) is supplied to the fuel cell system with the aid of a liquid ring pump (6) (paragraph 8).

D1 further implicitly discloses that impurities contained in the process gas (L) are taken up by the operating liquid (F) of the liquid ring pump (6) and the contamination of the operating liquid (F) with the impurities is monitored. It is common knowledge to the person skilled in the art that impurities contained in the process gas (L) are taken up by the operating liquid (F) of the liquid ring pump (6) (see also application description page 2, line 34 to page 3, line 3). The monitoring of the contamination of operating liquids in liquid compressors of all types in order to monitor the operating capability of the compressor is likewise a generally known routine technical activity.

2.1.2 This argument applies equally to the features of claim 11. The subject matter of the independent claims 1 and 11 is therefore not novel (Article 33(1) and (2)PCT).

2.2 The lack of novelty of the independent claims 1 and 11 may also be demonstrated on the basis of document D2.

2.2.1 Document D2 discloses (the reference characters refer to this document) a method of operating a fuel cell system (1), whereby a process gas (L) is supplied to this fuel cell system with the aid of a liquid ring pump and that impurities contained in the process gas (L) are taken up by the operating liquid of the liquid ring pump (6) (see paragraphs 2, 8, 21 and 23).
Here, by “a compressor, which pressurizes and accelerates the air flow, wherein by means of the purifying liquid impurities mixed with the air are removed” (see paragraph 25), wherein the purifying unit is integrated into the compressor unit (see column 3, lines 12 and 13), a liquid ring compressor is meant.

The features, that the contamination of the operating liquid with the impurities is monitored, are likewise from D2 (paragraph 26) [sic].

2.2.2 A corresponding argument to that in box 2.2.1 applies to the features of claim 11.
On the basis of D2, therefore, the subject matter of claims 1 and 11 is not novel (Article 54(1) and 54(2) EPC).

3 DEPENDENT CLAIMS 2-10
Claims 2-10 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT with regard to novelty or inventive step.

3.1 Novelty

- 3.1.1 D1 implicitly discloses the additional features of the dependent claims 2 to 4, because measuring the contamination of the operating liquid in liquid pumps in general, i.e. in liquid ring pumps too, is a routine, known technical activity. D1 also discloses the additional feature of the dependent claim 10 (see D1, claim 6).

The subject matter of the dependent claims 2 and 10 is therefore not novel (Article 33(1) and (2)PCT).

- 3.1.2 D2 likewise discloses the subject matter of the dependent
- claim 2 (Fig. 3 and paragraphs 25 and 26): the contamination of the operating liquid (here: purifying liquid) with the impurities is monitored by sensors (measurement of the conductivity by sensors is one of the generally known possible methods)
 - claim 3 (paragraph 26: the operation of a fuel cell block is optionally interrupted (here: by the determination of the operating times))
 - claim 4 (paragraph 26: the operating liquid (in D2: purifying liquid) is – given appropriate sensor values – exchanged)

The subject matter of the dependent claims 2 to 4 is therefore not novel (Article 33(1) and (2)PCT).

3.2 Inventive step

- 3.2.1 The subject matter of claim 5 differs from document D1, which is regarded as the closest prior art, in that at least one component flow of the operating liquid (F) is conveyed in a circuit via the purifying device.

This development of the invention achieves the object of purifying the operating liquid of the liquid ring pump.

Document D3 (the reference characters refer to this document) describes in

respect of the purifying device (6 and 15), which comprises an ion exchanger (column 2, line 54) and via which a flow of the operating liquid of the liquid ring pump is conveyed (Fig. 1; column 2, lines 39-49), the same advantages (column 4, lines 15-22) as the present application (page 8, lines 28-34) in respect of the purifying system, namely preventing too high an impurity content in the liquid of the liquid ring pump.

The feature disclosed in document D3, namely to dispose the purifying device in at least one component flow of the operating liquid of the liquid ring compressor disclosed in document D1 in order to reduce the content of impurities in the operating liquid, would therefore be regarded by the person skilled in the art as an obvious measure to achieve the stated object.

The features of the additional claims 6 (column 2, line 54) and 7 (Fig. 1, heat exchanger (10)) are disclosed in D3 or are generally known routine technical measures, as is the subject matter of claims 8 and 9.

The subject matter of the dependent claims 5-9 is therefore not based on an inventive step in the sense of Article 33(3)PCT, with the result that the requirements of Article 33(1)PCT are not met.

- 3.2.2 A corresponding argument also applies to the obvious combination of the features known from D2 and D3.

Re. Box No. VIII.

1. The application does not meet the requirements of Article 6 PCT because claims 1, 3, 4, 8, 9 are not clear.

Claims 1, 3, 4, 8, 9 are not clear and do not meet the requirements of Article 6 PCT inasmuch as the matter for which protection is sought is not clearly defined. There is an attempt in the claims to define the subject matter of the claims by the result that is to be

achieved; however, this merely indicates the object to be achieved without presenting the technical features needed to achieve this result.

2. The relative terms “upper limit value” and “lower limit value” used in claims 3 and 4 respectively are vague and unclear and leave the reader in the dark about the meaning of the relevant technical features. The result is that the definition of the subject matter of these claims is not clear (Art. 6 PCT).